

Middlesex University

SCHOOL OF PHARMACY

HORATIO S. CARD, A.M., M.D., *Dean*

ANNOUNCING

A TWO-YEAR COURSE IN PHARMACY

Leading to the University Diploma in Pharmacy with adequate preparation for the Registered Pharmacist license and the practice of pharmacy in Massachusetts.

1937-1938 SCHOOL YEAR STARTS
MONDAY, SEPTEMBER 27, 1937

Enrollments accepted now in person or by mail. Registrar's Office is open daily from 9 A.M. to 5 P.M. Immediate enrollment is urged to assure admittance.

415 NEWBURY STREET, BOSTON, MASSACHUSETTS

Telephone, Kenmore 9630

AT MASSACHUSETTS SUBWAY STATION

SCHOOL OF PHARMACY CALENDAR 1937-38

1937

AUGUST 1 TO SEPTEMBER 27—Enroll by Mail or in Person

SEPTEMBER 27, MONDAY—Junior Year Begins at 9 A.M.

OCTOBER 12, TUESDAY—Columbus Day, Holiday

NOVEMBER 11, THURSDAY, Armistice Day, Holiday

NOVEMBER 25 - 26, THURSDAY and FRIDAY—Thanksgiving Recess

DECEMBER 18, SATURDAY—Christmas Vacation Begins

1938

JANUARY 3, MONDAY—Classes Resume at 9 A.M.

JANUARY 27-28-31, THURSDAY, FRIDAY, MONDAY—Mid-Year Examinations

FEBRUARY 1, TUESDAY—Classes Resume at 9 A.M.

FEBRUARY 22, TUESDAY—Washington's Birthday, Holiday

MARCH 12, SATURDAY—Spring Vacation Begins

MARCH 21, MONDAY—Classes Resume at 9 A.M.

APRIL 19, TUESDAY—Patriots' Day, Holiday

MAY 30, MONDAY—Memorial Day, Holiday

JUNE 1 TO 7 INCLUSIVE—Final Examinations of the Junior Year

Calendar 1937

SEPTEMBER						
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NOTE: The Faculty of Middlesex University School of Pharmacy reserves the right to alter the Curriculum, Schedule, Tuition, or College Calendar in such manner as it deems best. It may also add to or eliminate any of the rules and regulations to be found in this announcement.

APPLICATION FOR ADMISSION
Middlesex University School of Pharmacy
415 NEWBURY STREET, BOSTON, MASSACHUSETTS

Name in Full (Mr., Miss or Mrs.).....

Home Address
Number Street

.....Telephone.....
City State

Business Address
Number Street

.....Telephone.....
City State

Date and Place of Birth.....Religion.....Nationality.....

If you have worked in Drug Stores, state length of experience and with whom:

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.....

If you have attended a High School, state where and when, naming the High School:

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.....

If you have attended a College, state where and when, naming the College:

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Give Name and Address (also telephone number) of parents or guardian:

.....

State whether you are married or single

Give two references

.....

I herewith enclose.....dollars to apply on my tuition fee.

Sign Full Name

Date..... Remarks.....

.....
.....

(Fill in the above spaces, tear the page out and bring it in or mail it in to the Registrar. Should your application be rejected for any reason, it will be returned to you with your fee; otherwise an admission card will be issued to you. Send money by certified check, draft, post office or express money order or registered mail.)

SPECIAL NOTICE

Middlesex University announces its School of Pharmacy will offer a two year course in Pharmacy to properly qualified candidates.

The two year course leads to a Diploma in Pharmacy and is designed adequately to prepare students for the examination of the Massachusetts Board of Registration in Pharmacy.

A three year course will be inaugurated the year beginning September, 1938, and the requirements for admission will be a high school education or its full equivalent.

A four year course leading to the degree of Bachelor of Science will be offered beginning September, 1939.

FOREWORD

The purpose of Middlesex University School of Pharmacy is to equip men and women with the proper background for successful careers in the profession of Pharmacy, and to provide a two-year course in Pharmacy for the benefit of those who cannot afford to spend four years at college and yet desire a pharmaceutical education at a reasonable cost.

Men and women of good moral character are admitted to the Massachusetts State Board examinations if they are twenty-one years of age or over, are citizens of the United States, and have either four years of practical experience in a drug store, or two years of practical experience in a drug store together with two years at a recognized school of pharmacy.

THE PROFESSION OF PHARMACY

IT HAS long been recognized by the public that the pharmacist is a man of real responsibility in his neighborhood and a vital factor in the health and happiness of his community. In his hands crude drugs and chemicals become medicines for the preservation of health and the treatment of disease. He is the physician's right-hand man.

Middlesex University School of Pharmacy is most interested in the development of the profession of pharmacy and is eager to attract to its student body only those men and women who are willing to accept the full responsibility which will be placed upon them as pharmacists. To young men and women who have not yet made a choice of a vocation Pharmacy is recommended for serious consideration. It can be safely said that never before have opportunities in Pharmacy and its many allied fields been so great and success so certain as at present. Remuneration for competent pharmacists is high. In addition to this, a person of thrift and industry has an opportunity of engaging in business for himself upon a moderate capital.

The pharmacist of today is not restricted to a strict practice of pharmacy and sale of drugs. The successful pharmacist is one who carries numerous sidelines determined wholly by his location and the demands of his patrons. The sale of drugs by unqualified persons, such as peddlers and general storekeepers, is being forbidden and restricted by state and federal laws, leaving this business to properly qualified pharmacists. During the past few years great strides have been made in the art of healing, involving many new drugs and chemicals, many of which are highly complex, synthetic compounds.

An examination of the alumni directory of any School of Pharmacy will demonstrate that graduates in Pharmacy occupy an unusually great variety of responsible positions, demanding trust and skill.

THE FACULTY

Competent instruction is of vast importance to the success of the student of Pharmacy. The faculty of Middlesex University School of Pharmacy has been carefully selected, and the professor in charge of each class is a specialist in the subject taught. The student is assured an opportunity, under the guidance of thorough and competent professors, to acquire a knowledge of Pharmacy which will help him to succeed in the practical pharmaceutical world.

It is now universally recognized that teaching is a profession requiring trained skill and intelligence of the highest order, and that it is not a make-shift that can be successfully attempted by the unskilled amateur. The disastrous results of incompetent teaching can be readily realized by intelligent students and require no further comment.

The strength of this institution lies in its efficient teaching. It is the aim of the professors to present each subject in the clearest and most practical manner, so as to insure thorough comprehension on the part of the student.

Every student is required to attend all his class exercises and to satisfy the professor in each of his courses of study, in a way to be determined by the professor, that he is performing the work of the course in a systematic manner. Professors will report to the Dean, from time to time, the names of students whose attendance or work is unsatisfactory.

Any professor, with the approval of the Dean, may at any time exclude from his course any student guilty of unbecoming conduct, or any student who, in his judgment, has neglected the work of the course. A student so excluded will be recorded as having failed in the particular course, unless the Faculty determines otherwise.

METHODS OF INSTRUCTION—LABORATORIES

The School of Pharmacy is a strong advocate of the laboratory method of instruction. All courses where it is possible are accompanied by practical work in the laboratory performed by the student under the direct supervision of the professor in charge. This work consists of that found in the modern up-to-date pharmacy.

The School of Pharmacy has its offices, lecture rooms, and laboratories on the first and second floors of its own building at 415 Newbury Street, Boston. These quarters have been completely renovated to meet the best needs of modern instruction in all branches of Pharmacy. All laboratories are equipped with apparatus, materials, and supplies necessary for practical pharmaceutical instruction. Laboratory tables with the necessary apparatus for specific courses are supplied the students. The laboratories of the Department of Pharmacognosy are well supplied with samples of crude drugs, official and unofficial.

LOCATION

Middlesex University School of Pharmacy is located at 415 Newbury Street, Boston (at the Massachusetts Avenue, Subway Station), within a few blocks of the retail business center, and only two blocks from Massachusetts Avenue and Boylston Street.

The central location makes it accessible by automobile, all car lines (elevated or subway), and railroads. Students under 21 receive reduced commutation railroad tickets.

The building has abundant floor space in laboratories and lecture rooms with ample natural light and ventilation.

QUIZ CLASSES

For the purpose of more fully elucidating the subjects presented in the lectures and laboratory work, and of familiarizing the students therewith and as a test of attention and progress, provision is made for a complete series of recitations and quizzes by the professors. The order of subjects and the manner of their treatment at these quizzes follow closely the courses of instruction given by the instructors in their respective subjects. In order that all the members of the classes may be drilled as often and as thoroughly as possible, these classes will be divided into sections if necessary, the instruction of each section being identical, but conducted at different hours.

SPECIAL LECTURES

During the course a series of lectures on subjects of interest and importance to students of Pharmacy are delivered by specialists in their particular profession or industry. The topics presented include Professional Ethics, Physiological Action of Drugs as Influenced by Molecular Construction, Psychological Studies in Salesmanship, Pharmaceutical Procedure in Hospitals, Drug Store Sundries, etc.

THE MODEL DRUG STORE

Donations from wholesale and jobbing firms and manufacturers have made it possible for the School of Pharmacy to equip a room as a model drug store. The arrangement of cases, etc., is such as to give one the impression, on entering, of an unusually neat, clean, and finely appointed drug store. All kinds of drug store merchandise and sick-room accessories are available for study. It is here that commercial pharmacy is taught. Decoration, salesmanship, advertising, buying, inventories, show-card writing, window trimming, etc., are practiced under constant supervision.

THE MEDICINAL PLANT GARDEN

Drugs official in the U. S. P. XI and N. F. VI are planted by the student body on the grounds of the Middlesex University and their growth, development and individual characteristics carefully noted and studied. Many acres of land are available for proper expansion.

EDUCATIONAL VISITS

Saturday mornings are set aside for visiting many of the important industrial and manufacturing plants of this region. Trips are made to glass works, soap factories, chemical, oil, and paint factories, steel works, wholesale houses, biological laboratories, botanical gardens, educational institutions, sugar refineries, food and drug laboratories, and to municipal, State, and Federal public-health and quarantine stations.

These visits are entirely at the option of the student and are under the supervision of a member of the Faculty or some of the advanced students. Inasmuch as no credit is offered and this work is not required, the School of Pharmacy assumes no responsibility in offering these additional facilities and opportunities.

FREE TEXTBOOKS AND NO LABORATORY DEPOSITS

Students are cautioned not to purchase any textbooks from outside sources, as the School will supply to the students, free of any cost to them, all textbooks necessary in the proper conduct of the individual subjects. Students will be supplied with laboratory equipment and supplies, free of any cost, and without deposit.

TUITION FEES

Complete tuition fee for the Junior year\$250

This fee may be paid in full at time of enrollment; or, in three installments, payable, \$85 at time of enrollment, \$85 on December 1, 1937, and \$80 on February 1, 1938. Tuition fees are not subject to refund.

ADMISSION CARD

Enrolled students receive from the University an admission card, which admits them to all classes. This card is not transferable.

ROOM AND BOARD

There are as yet no University dormitories, but room and board may be secured with private families. It is hardly possible to secure such accommodations for a smaller weekly expense than eight dollars. Students who prefer to club together can materially lessen the expense of living. Students who prefer to have their meals on the outside, may secure rooms without board at the Boston Y. M. C. A., 316 Huntington Avenue, and other places at very reasonable rates.

Women students may secure rooms and board at reasonable rates at the Boston Students' Union, 81 St. Stephen Street, the Y.W.C.A., 140 Clarendon Street, or the Franklin Square House, 11 East Newton Street, all of which are for women only.

Upon arriving in Boston, it is best to report at the Registrar's office, 415 Newbury Street, (Telephone Kenmore 9630), where temporary arrangements for room and board can be made until the student makes a permanent selection of living quarters.

APPRENTICESHIP

The day of apprenticeship in its true sense has passed. The student of today cannot afford to spend years doing errands and janitor work around a drug store while he is mastering a few fundamentals of the business that he could learn in a few weeks or months in a good School of Pharmacy. Time is money in Pharmacy as well as in any other field of endeavor. He who has the privilege of attending a well-rounded, practical and systematized course in a good School of Pharmacy will find that he has saved much in both time and money, and in addition to that he knows his profession in such a way that it is a source of satisfaction throughout his life's work.

PRACTICAL EXPERIENCE

Small groups from each class are assigned to the model drug store. Instruction is given in many phases of retail pharmacy incident to the successful operation of a store, even though no actual merchandise is sold. These include care and arrangement of stock, counter display of merchandise, show case and window trimming, and other phases which are a part of the merchandising of drug products.

Sales talks, approaching customers, use of the store files and the keeping of the various records are all a part of the plan to give students practical store experience.

STUDENT CONDUCT

Students should realize that their enrollment in the University carries with it obligations in regard to conduct, not only inside but also outside the classroom, and they are expected to conduct themselves so as to be a credit both to themselves and to the University. They are amenable to the laws

governing the community as well as to the rules and orders of the Middlesex University and University officials, and are expected to observe the standards of conduct approved by the University.

Whenever a student, group of students, society, fraternity, or other student organization fails to observe the principles of conduct above outlined, or conducts himself or itself in such a manner as to make it apparent that he or it is not a desirable member of the University, he or it shall be liable to disciplinary action or dismissal.

STUDENT - ACTIVITIES

The faculties of the several divisions of the University are united in their desire to encourage those student activities which make for a more complete fellowship among the students and for a greater solidarity throughout the institution as a whole. Intramural and intercollegiate athletics and social activities are encouraged.

WOMEN IN PHARMACY

During the past few years many women have taken up the study of Pharmacy. Today women have a greater opportunity in Pharmacy than ever before, and that they are alert to the possibilities is shown by the number now enrolling in Schools of Pharmacy. Drug firms are beginning to realize that women are better salesmen in many lines than men. The work is clean, light and agreeable, demanding speed, neatness, accuracy and reliability.

Women are found in many other professions such as Medicine, Law, Dentistry, and Nursing. Why not in Pharmacy? Women who are graduates in Pharmacy are fitted for positions with pure food and drug laboratories, boards of health, as prescriptionists in hospitals, as teachers of Pharmacy or chemistry, as analysts in pharmaceutical manufacturing establishments, and in the retail and wholesale drug business.

STUDENT EMPLOYMENT

The many retail pharmacies of Boston and environs afford students of pharmacy an opportunity for part-time employment. The registrar assists in placing those who may want employment, but cannot guarantee positions in advance, and positions cannot usually be secured by correspondence. In this connection we want to assure prospective employers that this service to them and to the students is without charge and that their applications for assistants (by mail or telephone: Kenmore 9630) will receive prompt and very careful attention.

ABSENCES

A student is expected to attend every college exercise assigned to him. No cuts are allowed. In case of illness, absences may be excused upon presentation of a physician's certificate to the Dean of the School. Any communication regarding absences must be made in writing.

Students, who for conscientious reasons, wish to observe holy days, included in the schedule of instruction may be excused but are required to leave their names in the office. They will be held responsible for the instruction given during their absence but no rating penalty will be imposed.

EXAMINATIONS

Written and oral tests are given at different intervals throughout the session and the ratings received are recorded. Mid-year and final examinations are held each year, and standing of the student in each subject is determined by the average of all the ratings received therein.

Examinations for the completion of courses in which the student received a grade of "Incomplete" and for the removal of conditions will be held only on the dates announced by the Dean. Students who are conditioned in the first year must remove the conditions before being admitted to the second year.

SCALE OF GRADING

The scholastic standing of the student is recorded in terms of the following symbols:

A, Excellent (93-100); B, good (87-92); C, Fair (80-86); D, Passed (75-79); E, Failed (below 75); I, Incomplete.

Grade E, Failed, obtained at the close of a course indicates insufficient attendance to take the final examination, discontinuance of the course without the consent of the Dean, or a record so poor that the student is required to repeat the work in class, or to remove the condition by a subsequent examination.

Grade I, Incomplete, is given only to those students who have a proper excuse for not presenting themselves for examination or for not completing the work of any course. It is not understood to signify work of an inferior quality. It will be replaced by a definite grade when all requirements for the course have been met.

PROMOTION

A student to be promoted to the second year must pass courses with a grade of at least 75 per cent.

ADVANCED STANDING

Students from other schools of pharmacy are admitted with advanced standing according to their qualifications as presented. In all cases a letter of honorable dismissal is required.

GRADUATION AND DIPLOMA REQUIREMENTS

Every person upon whom the University diploma shall be conferred, must be of good moral character, must have successfully completed the assigned course, must have paid all tuition fees, and must be present at commencement. No diploma can be conferred on the basis of work done *in absentia*.

HONOR ROLL

Students receiving a grade of "A" will have their names placed on the "Dean's Permanent List of Honor Students."

PRIZES

PHARMACY PRIZE: A prescription scale will be awarded to the Junior student who attains the highest average in Theoretical Pharmacy.

OPERATIVE (PRACTICAL) PHARMACY LABORATORY PRIZE: A copy of the new edition of the United States Dispensatory based on the U. S. P. XI and N. F. VI will be awarded to the Junior student who receives the highest average in Operative Pharmacy.

GENERAL (INORGANIC) CHEMISTRY PRIZE: Ten Dollars will be awarded to the Junior student who attains the highest average in General Chemistry.

GENERAL (INORGANIC) CHEMISTRY LABORATORY PRIZE: A set of books on chemistry will be awarded to the Junior student receiving the highest average in General Chemistry Laboratory Work.

MATERIA MEDICA PRIZE: A copy of the U. S. P. XI and one of the N. F. VI will be awarded to the Junior student receiving the highest average in Materia Medica.

FACULTY PRIZE: The Faculty offers a prize of \$50.00 in the form of a credit certificate to be applied toward the tuition fee in the Senior Year of that Junior student who receives the highest general average in all courses of the first year.

WOMEN'S PRIZE: The Dean of Middlesex University School of Pharmacy offers a prize of Twenty-five Dollars to the woman student in the Junior year who attains the highest general average in all courses of the first year among the women students.

GOLD MEDAL PRIZE: The Faculty Gold Medal Prize is awarded to that student of the Junior year who in the opinion of the Faculty did most in furthering the interests and welfare of the students and Faculty of the School of Pharmacy.

SILVER MEDAL PRIZE: A Silver Medal is awarded to the Junior student receiving the second highest general average in all courses of the first year.

BRONZE MEDAL PRIZE: The Bronze Medal is awarded to the student in the Junior year who receives the third highest general average in all courses.

CURRICULUM OF THE TWO-YEAR COURSE IN PHARMACY

Junior Year Starts Monday, September 27, 1937 and Ends June 10, 1938

[Classes meet daily (except Saturdays and Sundays) from
9:00 A.M. to 4:00 P.M.]

Theoretical Pharmacy	English
Operative (Practical) Pharmacy Laboratory	Physiology
General Inorganic Chemistry	Pharmaceutical Latin
General Inorganic Chemistry Laboratory	Botany
Qualitative Analysis	Art of Compounding Prescriptions
Inorganic Materia Medica	Toxicology
First Aid	Posology
Public Speaking	Business Law
Pharmaceutical Jurisprudence	Pharmaceutical and Chemical Arithmetic

Schedule of Days, Hours and Courses for the Junior Year Starting Monday, September 27, 1937

<i>Hours</i>	<i>Mondays</i>	<i>Tuesdays</i>	<i>Wednesdays</i>	<i>Thursdays</i>	<i>Fridays</i>
9-11	General Inorganic Chemistry	General Inorganic Chemistry Laboratory	Operative (practical) Pharmacy Laboratory	Qualitative Analysis	Operative (practical) Pharmacy Laboratory
11-12	Physiology	English	Pharma- ceutical Latin	Botany	Art of Compounding Prescriptions
12-1	Recess	Recess	Recess	Recess	Recess
1-2	Toxicology and Posology	First Aid	Public Speaking	Business Law	Pharma- ceutical Jurisprudence
2-4	Pharma- ceutical and Chemical Arithmetic	Theoretical Pharmacy	Pharma- ceutical and Chemical Arithmetic	Theoretical Pharmacy	Inorganic Materia Medica

CURRICULUM OF THE TWO-YEAR COURSE IN PHARMACY

Senior Year Starts Monday, September 26, 1938 and Ends June 9, 1939

[Classes meet daily (except Saturdays and Sundays) from
9:00 A.M. to 4:00 P.M.]

Bio-Chemistry	Economics
Advanced Theoretical Pharmacy	Drug Store Accounting
Advanced (Practical) Pharmacy Laboratory	New and Non-Official Remedies
Organic Chemistry	Zoology
Organic Chemistry Laboratory	Physics
Organic Materia Medica	Quantitative Analysis
Histology	Art of Compounding Prescriptions
Pharmacognosy	Pharmaceutical Chemistry of the U. S. P. XI and N. F. VI
Bacteriology	Salesmanship
Hospital Pharmacy	Merchandising, Advertising Display

Schedule of Days, Hours and Courses for the Senior Year Starting Monday, September 26, 1938

<i>Hours</i>	<i>Mondays</i>	<i>Tuesdays</i>	<i>Wednesdays</i>	<i>Thursdays</i>	<i>Fridays</i>
9-10	New and Non-official Remedies	Histology	Zoology	Physics	Pharmacognosy
10-12	Organic Chemistry	Organic Chemistry Laboratory	Advanced Operative (practical) Pharmacy Laboratory	Quantitative Analysis	Advanced Operative (practical) Pharmacy Laboratory
12-1	Recess	Recess	Recess	Recess	Recess
1-3	Art of Compounding Prescriptions	Advanced Theoretical Pharmacy	Pharmaceutical Chemistry of U.S.P. XI and N.F. VI	Advanced Theoretical Pharmacy	Organic Materia Medica
3-4	Bacteriology	Bio-Chemistry	Merchandising, Advertising, Salesmanship, Display	Drug Store Accounting	Economics

DESCRIPTION OF COURSES

The course of instruction at Middlesex University School of Pharmacy consists of two annual sessions of thirty-two weeks each, and includes lectures, recitations, and laboratory courses. In addition to the regular lectures and demonstrations by members of the faculty, the students have the advantage of hearing many special lectures by men of prominence in the profession and allied sciences.

The faculty reserves the right to make any changes in the curriculum or content of courses.

THEORETICAL PHARMACY

This course is an introduction to the study of Pharmacy. It is intended as a basic study which gives the student a complete understanding of the profession and the manner in which each phase of his training is of importance to him in his work. It includes a review of the history of the profession of Pharmacy and its relationship to the allied professions of medicine and surgery. The origin, development, authenticity, and purpose of the United States Pharmacopoeia and National Formulary are thoroughly discussed as are also the history and function of pharmaceutical associations. The student becomes familiar with fundamental pharmaceutical processes such as comminution, solution, decantation, clarification, decolorization, granulation, purification, etc. In the laboratory he performs experiments which demonstrate the processes explained in lecture, becomes familiar with the apparatus used, and receives his first training in pharmaceutical technique.

OPERATIVE (PRACTICAL) PHARMACY LABORATORY

In this course the student begins the study of galenical preparations such as waters, spirits, syrups, mucilages, emulsions, lotions, infusions, decoctions, powders, vinegars, et cetera.

The laboratory work in this course stresses technique, accuracy, and the development of rapidity in making a satisfactory product. The student manufactures two or more preparations of each class studied.

The course continues into the consideration and manufacture of more difficult preparations, such as fluid extracts, tinctures, elixirs, extracts, oleoresins, oleates, etc. Manufacture of toilet preparations is also included.

PHARMACEUTICAL LATIN

This course consists of a study of the basic principles of Latin Grammar as they relate to pharmaceutical, chemical, and botanical nomenclature, prescription writing and interpretation. Not only are students required to study pharmaceutical vocabularies and to translate Latin prescriptions into English, but they are also required to translate a large number of typical prescriptions from English in to Latin. This method helps to fix in mind the essential features of Latin grammar and syntax as involved in prescription writing and reading.

PHARMACEUTICAL AND CHEMICAL ARITHMETIC

This is a course designed to familiarize the student with the methods of solution of mathematical problems in prescription pharmacy. Instruction is offered in problems of enlarging and reducing formulae, percentage solutions, triturations, specific gravity, specific volume, weights and measures, alligation, and other problems of especial application to the profession.

PHARMACEUTICAL CHEMISTRY OF THE U. S. P. XI AND N. F. VI

This course stresses the application of the fundamental chemical concepts to the drugs used in the practice of pharmacy. The student receives a great deal of valuable descriptive material regarding their chemical and physical properties, source, and manufacture. Primary emphasis in lecture work is placed upon drugs and their preparations which are official in the *United States Pharmacopoeia* and the *National Formulary*.

ART OF COMPOUNDING PRESCRIPTIONS

This course is an introduction to the fundamentals of actual prescription compounding. In lecture the student receives the theoretical information pertinent to the field of practical dispensing, together with explanations and demonstrations of the various kinds of prescriptions.

The laboratory work comprises in the main the filling of a comprehensive list of type prescriptions, many of which have been recently ordered by physicians.

In addition to the acquisition of a thorough theoretical and practical foundation for manipulative dispensing pharmacy, the student receives a most helpful course in professional ethics, scientific prescription pricing, and the cultivation of a prescription business.

BUSINESS LAW

This course consists of a study of the fundamental considerations of general business law and discussions of the laws and regulations which affect the practice of Pharmacy. It includes:

Contracts, oral, written, simple and formal, essentials of legal contracts, competent parties, etc., discharge of contract, conditions that invalidate a contract, and the purchase of goods under contract.

Agency, principal and agent qualifications, rights and responsibility, special agents, power of attorney, and revocation of agency.

Partnership, eligibility, duties, rights and obligations, responsibility for the debts of the partnership, articles of co-partnership, and dissolution of a partnership.

Stock companies and corporations, formation, membership, and general conduct, stock certificates, dividends, par and market value, common and preferred stock, rights and obligations of stock holders.

Banking, types of banks, methods of making deposits, withdrawals, and securing loans.

Checks, ordinary, certified, protested, signers, endorsers, and their responsibility.

Negotiable papers, checks, notes, bonds, money orders, trade acceptances, etc.

Property, real and personal, proof of ownership.

Real estate, deed, recording, classification, warranty, and quit claim.

Personal or chattels, bill of sale, receipt of sale.

Classification of receipts, simple, part payment, and in full.

Mortgage, mortgagor and mortgagee, foreclosure of mortgage, cause and procedure, chattel mortgage.

Lease, lessor and lessee, rights and obligations, sublease and assignment of lease.

Insurance, classification, fire, life, plate glass, accident, indemnity, employer's liability, burglary and annuity.

Fire insurance policy, standard form, blanket policy, items specified. Obligations of company, inventory and proof of loss.

PHARMACEUTICAL JURISPRUDENCE

A comprehensive study of the laws affecting the practice of pharmacy.

The source of law, enactment, application, interpretation, and enforcement.

The federal pure food and drug act, misbranding, substitution, and adulterations.

The federal anti-narcotic law (Harrison act), drugs that come under its provisions, exempt preparations, registration of pharmacists, records to be kept, reports to be made to the department, and department regulations under the law.

Postal law, federal caustic poison act, weight and measure laws, labor laws, workman's compensation law, are all considered in their relation to the pharmacist and the practice of pharmacy.

State pharmacy law, state board of pharmacy, membership, duties, and powers.

TOXICOLOGY

The course in toxicology aims to teach the student the nature, effects and antidotes of poisons. The poisons are classified according to their local or systemic action. The corrosive, inflammatory and shock actions of poisons are explained and attention is given to the different poisons which belong to each of the above groups.

The classes of systematic poisons which receive attention are the general motor paralyzants, special motor paralyzants, general motor stimulants, special motor stimulants, sensory irritants, sensory paralyzants, cerebral stimulant, together with methods of treatment.

POSOLOGY

The course in Posology includes the definition of average, minimum, maximum, toxic, single, divided and repeated doses; factors influencing the dose—body weight, age and rules; sex, temperament, occupation, habits, idiosyncrasy, nature of the disease, object of giving

medicine, forms of the drug, time of administration, frequency of administration; Ways of Administration: by mouth, by inhalation, by rectum, cutaneously, intracutaneously, hypodermically, intramuscular, intravenous, hypodermatoclysis.

A careful study is made of the doses of the U. S. P. and N. F. drugs which are arranged in two parts, Part I Liquids and Part II Solids. The liquids and solids having similar doses are classified in groups, beginning with the drugs having the smallest dose and ending with drugs having the largest dose.

GENERAL INORGANIC CHEMISTRY

The lectures begin with a discussion of general principles, including structure and composition of matter and the changes produced in matter by the various forms of energy. The study of other theoretical facts such as the atomic theory, the classification of compounds and oxidation and reduction is deferred until the student is better enabled to understand them. The remainder of the lectures of the first year are devoted to a detailed study of the non-metals; the occurrence, preparation, properties, and uses of each element are discussed as well as the compounds which each one forms with those previously studied; thus will be considered the important oxides and acids.

Those elements or compounds which are important receive especial emphasis. Proper consideration is given to chemical notation, nomenclature, and to equation writing.

The laboratory work in General Inorganic Chemistry begins with simple exercises to familiarize the student with methods of measuring volumes and weights, manipulation of glass tubing, the proper method of heating, transferring and filtering liquids, chemical action and varieties of matter. Instruction in theoretical topics is supplemented by laboratory exercises on oxidation and reduction, equilibrium, valence, combining weights, solution and ionization.

The properties of the non-metallic elements are studied in the laboratory course and in many cases the elements are isolated by one or more methods, thus will be considered, oxygen, hydrogen, carbon, nitrogen, chlorine, sulphur, bromine, iodine and phosphorus. Other laboratory exercises deal with the study of the preparation and properties of the compounds formed by union of the non-metals with each other, such as the oxides and acids.

The course in General Inorganic Chemistry aims to give the student a comprehensive knowledge of the fundamental principles of the science. By proper attention the student will obtain a fund of information which will enable him to understand more readily the advanced work in chemistry in his second year.

This course continues in the study of the metals grouped according to their relations in the periodic table; thus will be studied, the alkali metals, alkaline-earth metals, magnesium, zinc, mercury, aluminum, tin, lead, copper, silver, gold, iron, cobalt, nickel, platinum group, bismuth, chromium, manganese and radio-active metals. The compounds which each metal forms with the non-metals and their acids receive careful consideration.

QUALITATIVE ANALYSIS

In this course are studied the main operations which form the foundation of inorganic qualitative analysis. The student is thus prepared to separate and identify the important metals and acids, also to test inorganic chemicals for identity and purity.

The work begins with a study of dissociation, law of mass action, common ion effect and other theoretical facts essential for an understanding of the subject. This is followed by a detailed study of each of the basic ions arranged in groups, this enables the student to detect such ions either alone or in a mixture.

The course consists mainly of work performed in the laboratory. The systematic course of qualitative analysis begins with series of tests carried out on solutions of a salt of each individual metal in a group, thus the student becomes familiar with the reactions of each basic ion. After this study the student receives a "known" solution containing all the basic ions of the group and is required to separate and identify each member. He is then given "unknown" solutions which may contain basic ions of one or more groups and is required to analyze the same. The foregoing plan is applied in the study of the more important inorganic and organic acidic ions.

During the course the student is required to write and balance equations representing the reactions studied in each laboratory period and to submit a written report of his work.

ORGANIC CHEMISTRY

A classification and study of organic compounds, aliphatic and aromatic, as well as some of the more important heterocyclic compounds, constitutes the major portion of this course. Empirical formulas are now abandoned and structural formulas used exclusively. The relation between chemical properties and structure is emphasized and whenever possible the principles of the science are illustrated by facts of interest to the pharmacist. Such important classes as hydrocarbons, halogen derivatives, alcohols, aldehydes, ketones, acids, acid anhydrides, ethers, amines, acid amides, acid chlorides, mercaptans, carbohydrates, and proteins are among the topics included in the course. The occurrence, general method of preparation, and chemical properties for each group are presented. Other facts of special importance are then added for individual members of the group. It is found that by so systematizing the presentation of the subject, much confusion on the part of the student is avoided.

Typical organic compounds are prepared in the laboratory. The student becomes familiar with important processes and operations and develops the technique necessary for their successful manufacture.

QUANTITATIVE ANALYSIS

The lectures begin with a study of volumetric analysis and the preparation and standardization of volumetric solutions and the use of these standardized solutions in determinations involving neutralization, precipitation, oxidation and reduction. Lectures follow on the assay of drugs and their preparations for active constituents. These assays involve some operations and determinations not employed in the ordinary assay of chemical compounds.

In the laboratory work the student is required to make and standardize the volumetric solutions to be used in volumetric assays of chemicals involving neutralization, precipitation, oxidation and reduction processes and to perform assays of fats and oils for iodine, saponification and acid values; assays based upon enzyme action, upon optical rotation and upon refractive index; alkaloidal assays by volumetric methods based on the use of immiscible solvents.

PHYSICS

The aim of the course in Physics is to give the student a thorough foundation in the elementary principles of the subject. The main divisions studied are mechanics, magnetism, electricity, heat, sound and light. The study of mechanics includes matter and energy, kinematics, dynamics and hydromechanics. The topics covered in a study of magnetism and electricity are the magnet and its applications, electrostatics, electrodynamics, electric discharges and radiations. Heat is discussed as to nature, effects, modes of transmission and thermodynamics. The study of sound includes waves, nature, transmission, physical basis of music and resonance. Under light is considered general phenomena, nature, propagation, refraction, lenses, colors, polarization, photometry and optical instruments.

BOTANY

This course consists of a general study of plant life. It includes a consideration of ecology, the evolutionary stages of plant life, metabolism, the formation of plant-parts which are used as drugs, and a complete study of the forms and functions of the plant and its organs. The root, stem, leaf, flower, fruit, and seed morphology is studied in lecture, and in the laboratory the student examines these plant parts with the aid of a dissecting microscope. Wherever possible, plants which yield the official drugs are used for laboratory study. The student is required to keep an accurate note book and detailed laboratory journal.

INORGANIC MATERIA MEDICA

This course consists very largely of a study of the inorganic and synthetic organic substances used in pharmacy and medicine. The official names, synonyms, physical and chemical properties, uses, and doses are considered. The study of pharmaco-dynamics, therapy-dynamics, toxicology, and posology is introduced. Many pharmaceuticals included among New and Non-Official Remedies and Accepted Dental Remedies are studied.

ORGANIC MATERIA MEDICA

This course offers a study of the vegetable and animal drugs and preparations, official as well as some of the more important non-official drugs. The drugs are classified according to the parts used and to their therapeutic action. The methods of preserving drugs and their preparations are considered. The preparation and uses of biological and bacteriological products are reviewed and discussed.

HISTOLOGY

This course consists of a study of the anatomical structure of roots, stems, woods, barks, leaves, flowers, and seeds, the functions of the various organs, and the component elements of the tissues and cell contents. During the latter part of the course plant physiology and plant chemistry are considered as are metabolistic products which form the so-called active constituents of plant drugs.

PHARMACOGNOSY

This course consists of a study of the history, source, collection, preparation, identification, purity, evaluation, and preservation of vegetable drugs. All of the official drugs are classified and considered individually both macro- and microscopically. Each student is furnished with a complete set of official drug samples for study, and is required to pass a number of identification tests to acquaint him with all drugs he is expected to handle later.

PHYSIOLOGY AND FIRST AID

The course begins with a general consideration of the functions of living organisms. The chief points concerning the anatomy of the human body are then considered. The course is concluded with a study of the functions of the different organs of the human body together with a classification of medicines and their doses.

First Aid—Since the pharmacist is frequently called upon to administer first aid, this subject is given as a separate course in the pharmacy curriculum. First aid materials; general directions for giving first aid and the emergency treatment of injuries requiring first aid receive careful consideration. The lectures are illustrated by practical demonstrations.

ZOOLOGY

A survey course dealing with the major concepts of zoology from the point of view of comparative structure and function.

BACTERIOLOGY

This course includes the study of various types of bacteria and the products of bacterial action, with special reference to the pathogenic micro-organisms, and problems of public health. The laboratory work includes the preparation of media, methods of sterilization, and cultural studies of the micro-organisms together with such exercises as the bacteriological examination of water, the determination of germicidal activity, the preparation of autogenous vaccines, etc.

BIOCHEMISTRY

This course is divided into two general considerations. The first part of this course consists of a study of substances of physiological importance, such as carbohydrates, proteins, fats, lipoids, and the more important nitrogenous constituents of the blood and urine. The second part of the course is devoted to the study of the chemistry of digestion, metabolism, and excretion. Special attention is devoted to the subject of nutrition and the biological assays for the several vitamins are demonstrated.

The laboratory work is so arranged as to illustrate the topics of the lectures. Special attention is given to the qualitative and quantitative examination of blood and urine.

ENGLISH

The fundamental principles of English composition, the logical organization and presentation of material, as well as the mechanics of form are stressed through the writing of themes in this course. It is quite essential, regardless of the branch of modern pro-

professional, technical, or scientific work one may be engaged in, to possess the ability to express himself clearly, concisely, and accurately. This is the aim of the course in English composition. So far as time will permit, the writing of business letters, reports on current scientific topics, practice in the investigation of scientific subjects, and the arrangement of such material and its presentation in proper form will be studied.

PUBLIC SPEAKING

This course offers a study of the mechanics of speech, as well as practical work in the writing and presentation of speeches. Tone formation, speech outlines, and the elements of speech composition are stressed. This course is designed to enable the student appearing before an audience to think logically, speak effectively, and present his ideas forcefully and with precision.

ECONOMICS

The nature, scope and organization of our economic activities are surveyed in this course. The price system, mechanism and processes of exchange; the organization of industry, processes and conditions governing price making and the division of national income among the various economic groups are studied in some detail. Problems more closely associated with business and plant management are also studied. A survey is made of problems of location, ownership, organization, purchasing, labor management, selling, and financing.

DRUG STORE ACCOUNTING

The fundamental principles of accounting are presented in this course. The student is made familiar with the nature and operation of books of original entry such as are used in modern accounting methods. Ledgers, the books of final entry and their operation including posting, closing, and balancing are discussed in considerable detail, also construction and analysis of work sheets. Partnerships, corporations, the valuation of assets, and the classification of balance sheet items are studied during the latter part of the course.

ADVERTISING, MERCHANDISING, SALESMANSHIP, DISPLAY

This course consists of lectures, demonstrations, and practical work along lines quite essential for the successful pharmacist, and among other divisions it includes sign writing, display, store arrangement, store location, and layout by departments, necessary capital, methods of financing, merchandising, discounts and turnover, salesmanship, advertising, window dressing, etc.

NOTICE

Inasmuch as this is the only year that Middlesex University School of Pharmacy will admit applicants to a two-year course, and further because a record enrollment is expected, the School of Pharmacy will limit the enrollment to 250 students. Enrollments will be accepted in the order of receipt by the School either through the mails or in person. Immediate enrollment is recommended to assure admittance. The School of Pharmacy reserves the right to return applications and fees after the capacity enrollment has been reached.

OFFICE HOURS

The Registrar's Office is now open daily (except Sunday) from 9:00 A.M. to 5:00 P.M. to receive applications for admission, and to transact the general business of the School of Pharmacy.

COME TO BOSTON — MAKE IT YOUR HOME

Boston is one of the most important drug centers in the United States. Millions of dollars are spent here annually in the manufacture, production, and distribution of drugs, chemicals, medicines and proprietary preparations. Students at Middlesex University School of Pharmacy have the advantage of visiting the drug establishments at their pleasure.

Boston is recognized as a cultural center of the first rank. In or near it are located a large number of institutions of higher learning (liberal, scientific and professional). Within the Boston area many thousands of young men and women from every section of the United States are received annually to pursue their studies in an intellectual and cultural atmosphere. This should be particularly significant to those seeking the entrance of the profession of pharmacy.

Boston (and its suburban communities) is as beautiful as it is historic. It is located in the heart of one of the first European civilizations planted in America. Since the beginning of our history, the citizens of this community have played a leading part in local, state, and national affairs. Boston was the storm-center of the Revolutionary War. Its museums, libraries, monuments, historic public buildings, homes, churches; its historical cemeteries, its traditions; its social life and cultivated citizenship—these are esteemed not only in Boston but all over the United States. Students privileged to live in this environment are provided unique opportunities for cultural attainments, the city in spirit is a veritable college campus. We invite you to Boston. Bring your family or come alone. Boston is located in a State having more than 2,000 drug stores. There is a friendly openness and accessibility among the pharmacists and drug clerks, and this constitutes an attraction and real advantage to students anxious to succeed in the profession of pharmacy.

Boston is only three hours by train from Portland (Maine), five hours from Albany or New York City, and seven hours from Philadelphia.

Upon arrival in Boston, report to the Office of the School of Pharmacy at 415 Newbury Street (Kenmore 9630). We will assist you in locating living quarters.

The Profession of Pharmacy Offers the following Lucrative Opportunities to University Trained Men and to Registered Pharmacists

Proprietor of Your Own Drug Store

Registered Pharmacist in a Retail Pharmacy

Manager or District Manager in a Chain Organization

Executive in a Manufacturing or Wholesale Drug Company

Salesman for Manufacturing or Wholesale Drug Company

Detail Man to Interest Physicians in Pharmaceutical and Biological Products

Hospital Pharmacist in Charge of the Dispensary

Purchasing Agent of Hospital Supplies

Pharmacist in County or State Hospitals and Institutions

Pharmacist in Federal Hospitals and Institutions

Inspector of Drug Stores and Drug Houses

Public Health Service Worker

Alcohol and Narcotic Inspector

Registered Pharmacist in Government Service

Editor of Pharmaceutical Journal

Contributor to Pharmaceutical Journals

Editor of Manufacturer's House Magazine

Advertising Manager of Pharmaceutical House

Advertising Salesman for Pharmaceutical Journal

Executive of School of Pharmacy

Teacher on Staff of School of Pharmacy

Executive of a Pharmaceutical Association

Member of a State Board of Pharmacy

Secretary of a State Board of Pharmacy

Pharmacist on Board a Ship

Food Inspector

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Ann T. McGrath, R.N.

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THE REGISTRAR'S OFFICE: 415 NEWBURY ST., BOSTON, MASSACHUSETTS

TELEPHONE: KENMORE 9630